

said optical sensors carry a wavelength converter thereon.

wherein

said wavelength converter is a fluorescent substance.

Claims 1, 3-5 and 9-11 are currently under consideration and have been amended to recited Applicants' invention more clearly. Claims 2, 12-15 and 19-21 have been cancelled without prejudice.

The specification was objected to because Claim 9 depended upon itself. As shown above, Claim 9 has been amended to depend upon Claim 1, obviating the objection.

Claims 1-5, 9, 12-15 and 19 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent 5,504,348 (Yoshida et al.). Claims 1-5, 9-15 and 19-21 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent 5,811,790 (Endo et al.). Claims 1-5, 9, 12-15 and 19 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S.

Applicants submit that amended Claim 1 is patentable over each cited reference for at least the following reasons.

Amended Claim 1 is directed to an image reading apparatus having a plurality of optical sensors formed on a substrate comprising: a wire for checking acceptability of cutting of the substrate arranged outside a region where the optical sensors are arranged and on the side where the substrate is cut.

A characteristic feature of the invention defined by Claim 1 is the wire, arranged along a peripheral area of the substrate, for checking the acceptability of the cutting of the substrate. This recited structure can reduce the space along a peripheral area of a substrate, including the estimated margin necessary for cutting of the substrate.

The Office Action took the position that Yoshida discloses a semiconductor device having a plurality of functional elements formed on a substrate or an insulator comprising a slice line arranged along an outer periphery of a substrate, and a peripheral wire 526 connected to a constant electric potential or ground or reference potential wherein said peripheral wire has a pad section and arranged between said slice line and said functional elements.

However, Applicants have found no teaching in Yoshida of cutting the substrate in a desired size. Accordingly, Yoshida does not teach a wire for checking acceptability of the cutting of the substrate, as recited in amended Claim 1. Moreover, Applicants have found no teaching in Yoshida that the wire for checking acceptability of the side where the substrate is cut. The peripheral wire 526 disclosed in Yoshida connects each of address and data lines of a liquid crystal display by way of protection elements.

(Col. 19, lines 31-44.) Applying a compensation voltage to the peripheral wire 526 decreases the potential difference between the data lines or address lines and a short-wiring in operation. Hence this wire is clearly different from the recited wire for checking acceptability of cutting of a substrate. Accordingly, amended Claim 1 is believed clearly patentable over Yoshida.

The Office Action took the position that Endo discloses, in Figs. 5 and 7, as well as in Claim 23, a semiconductor device comprising a slice line which is arranged along an outer periphery of a substrate or an insulator, and a peripheral wire connected to a constant electric potential or ground or reference potential wherein said peripheral wire has a pad section and arranged between said slice line and functional elements.

Applicants cannot agree with the Office Action's characterization of Endo. In any event, however, Endo does not teach a wire for checking acceptability of cutting of a substrate, as recited in amended Claim 1. Accordingly, amended Claim 1 is believed clearly patentable over Endo.

The Office Action took the position that Henley discloses a semiconductor device comprising a slice line which is arranged along an outer periphery of a substrate or an insulator, and a peripheral wire 21 connected to a constant electric potential or ground or reference potential wherein said peripheral wire has a pad section and arranged between said slice line and functional elements.

However, the peripheral wire 21 in Henley is provided to avoid electro-
static discharge and is clearly distinct from that for checking acceptability of cutting of a substrate, as recited. Moreover, Applicants have found no teaching of Henley cutting of a substrate, and

hence no teaching that a wire for checking acceptability of cutting of a substrate is arranged outside a region where optical sensors are arranged and on the side where the substrate is cut. Accordingly, amended Claim 1 is believed clearly patentable over Henley.

A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claim herein. That claim is therefore believed patentable over the art of record.

The other claims in this application are each dependent from the independent claim discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,


Attorney for Applicants

THOMPSON, GILL & HARPER & SCINIO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

cc: Mr. [illegible]



VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Amended) [A semiconductor device] An image reading apparatus having a plurality of [functional elements] optical sensors formed on a substrate comprising:

[a slice line for cutting said substrate which is arranged along the outer periphery of said substrate, and a peripheral wire arranged between said slice line and said functional elements]

a wire for checking acceptability of cutting of said substrate arranged outside a region where said optical sensors are arranged and on the side where said substrate is cut.

2. (Cancelled)

3. (Amended) The [semiconductor device] image reading apparatus according to claim 1, wherein

said [peripheral] wire is connected to a constant electric potential.

4. (Amended) The [semiconductor device] image reading apparatus according to claim 3, wherein

said constant electric potential is the ground potential.

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according to claim 1, wherein

said [peripheral] wire has a pad section for checking electric conductivity.

9. (Amended) The [semiconductor device] image reading apparatus

according to claim [9] 1, wherein

said substrate is an insulator.

10. (Amended) The [semiconductor device] image reading apparatus

according to claim 1, wherein

said [functional elements] optical sensors carry a wavelength converter thereon.

11. (Amended) The [semiconductor device] image reading apparatus

according to claim 10, wherein

said wavelength converter is a fluorescent substance.

Claims 12-15 (Cancelled)

Claims 19-21 (Cancelled)